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ABSTRACT

While minor physical anomalies (MPAs), a set of 17 non-obvious but measurable characteristics of the hands, face and feet, have been linked to a number of behavioral syndromes in children, such personality correlates of MPAs in adults have not been studied. To explore the relationshp between MPAs and temperament in a college sample, 114 students (74 males, 40 females; 74 Caucasian, 36 Oriental, 4 other) completed a battery of personality tests and lifestyle questionnaires, then were examined for MPAs (e.g., attached ear lobes, fine-electric hair, multiple hair whorls, curved fifth finger, and steepled palate). Analyses of results for the 74 Caucasians showed that 25 of 30 correlations evidenced a positive relation between MPAs and temperament. Among males, correlations with MPAs were significant for the Physical Activity and Clumsiness factors of the lifestyle inventory as well as for the emotionality, extraversion, sex-role and Type A personality measures. No significant correlations were found for females. The observed results provide further evidence that temperament has a biological basis. The relationship with MPAs supports a congenital explanation for temperament, and may provide a useful tool for further research. (JAC)

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1500-word Abstract

Predicting Adult Personality from Minor Physical Characteristics

Subject Index Term: personality measurement

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100-word Abstract

Predicting Adult Personality from
Minor Physical Characteristics

Delroy Paulhus and Carol Martin

It is known that, in children, individual differences in temperament are linked to rates of minor physical anomalies (MPAs). These anomalies are a standard set of 17 non-obvious but measureable characteristics of the face, hands and feet. This study explored the relationship between MPAs and temperament in a college sample. A sample of 114 subjects completed a battery of personality tests and lifestyle questions, then were examined for MPAs. Among males, correlations with MPAs were significant for the Physical Activity and Clumsiness factors of the lifestyle inventory as well as for the emotionality, extraversion, sex-role and Type-A personality measures. No correlations were significant among females.

Predicting Adult Personality from

Minor Physical Characteristics

Delroy Paulhus and Carol Martin

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Minor physical anomalies (MPAs) are a set of non-obvious but measurable characteristics of the face, hands and feet. A high-rate of MPAs in children has been linked to a number of behavioral syndromes. In clinical samples, a high rate of MPAs is associated with Down's syndrome and schizophrenia (Smith, 1970) and learning disabilities (Waldrop, Pedersen, & Bell, 1968).

In non-clinical samples, multiple anomalies predict high levels of psychological temperament. For instance, high numbers of MPAs are found in hyperactive, aggressive and impulsive preschool boys (Waldrop & Halverson, 1971). Although the relationships are weaker and less consistent, multiple anomalies in girls have been associated with withdrawn, inhibited, and fearful behavior (Waldrop, Bell & Goering, 1970). Note that, in normal populations, MPAs do not affect physical attractiveness, and are rarely noticed by the possessor (e.g., Rosenberg & Weller, 1973).

Temperament variables are individual differences in typical levels of physical, social, and emotional activity which are thought to have a biological basis. Such temperament factors appear to underlie a wide range of personality characteristics and show consistency across the lifespan (Thomas, Chess & Birch, 1970). Buss and Plomin (1975) have developed self-report and rating scales to index four major components of temperament, viz., emotionality, activity level, sociability and impulsivity.

The link between MPAs and temperament appears to originate in common congenital events. One theory is that factors operating during the first

trimester of pregnancy which influence the occurrence of minor physical anomalies (e.g., testosterone level) also affect the development of the nervous system (Smith, 1970). The anomalies are evident at birth and remain stable through childhood (Waldrop & Halverson, 1971) and presumably through the lifespan, although they have never been monitored that long.

The fate of children with temperament problems is not well understood. Apparently many such children develop into normally-adjusted adults while others continue to exhibit problem behaviors (Barkley, 1980). Some may have learned to redirect their activity into more socially suitable forms. For example, an aggressive, hyperactive boy may successfully direct his excessive energy into sports. As adults such individuals may channel their energy into their work. For instance, the workholic, time-pressured and hostile Type-A personality (Glass, 1977) may well develop from the child with an overactive temperament.

Such personality correlates of MPAs in adults have not been studied. By examining MPA rates and personality in older samples, the fate of hyperactive children may be better understood. Thus the goal of the present study was to explore the relation between MPAs and personality characteristics in a college sample.

Method

One hundred and fourteen subjects (74 females, 40 males) were recruited from psychology courses. Of these, 74 were Caucasian, 36 were Oriental, and four were of other races. Subjects were tested in small groups.

Subjects first completed several questionnaires. One questionnaire contained a large number of lifestyle questions concerning personal habits (sleeping hours, smoking, drinking), physical activities (exercise, sports), aggression, clumsiness, and behavioral difficulties in school. The second questionnaire was a battery of personality tests including the Buss-Plomin

temperament inventory, Eysenck's Extraversion scale, Bem's Sex-Role Inventory, and the Jenkins Activity survey for assessing Type-A behavior.

The minor physical anomalies assessment consisted of a ten minute examination for the standard set of 17 characteristics of the head, face, hands, and feet (Waldrop & Halverson, 1971). Some examples are attached earlobes, fine-electric hair, multiple hair whorls, curved fifth finger, and steepled palate. The evaluator was blind to the personality results.

Three behavioral indicators of temperament were also rated. First, each individual was rated for physical activity during a 15-minute interview (inter-rater reliability was .72). In addition, the time for completion of a 50-item multiple-choice exam was recorded. (Note that time for completion was not correlated with score on the exam.) The times were recorded for two such exams.

RESULTS

The 69 life-style variables were factor-analyzed and a three-factor solution was found to be most interpretable: The factors were labelled Physical Activity, Aggression/Misbehavior and Clumsiness. Factor scores were generated for each factor. The three behavioral measures of temperament were each standardized, then summed to yield a single index.

Because of limited space only the results for the 74 whites will be presented here. Table 1 shows for each sex the correlations between number of MPAs and the ten measures of temperament. Note that 25 of 30 correlations show a positive relation between MPAs and temperament. As in younger

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Insert Table 1 about here

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samples, the results are generally stronger for males. In fact none of the correlations is significant in the female sample.

Among the males, correlations with MPAs were significant for the Physical Activity factor, the Clumsiness factor, emotionality, extraversion and Type-A behavior. The behavioral index was only marginally significant for males, $r(23) = .26$, $p < .10$, although it is significant in the combined sample.

The results for Bem's sex-role dimensions are reported in Table 2. Both

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Insert Table 2 about here

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dimensions correlate significantly with no. MPAs among males and in the combined sample. Note that Bem's masculinity scale has been shown to be equivalent to the trait of dominance (Wiggins & Holzmuller, 1980) or instrumentality (Spence & Helmreich, 1983). Similarly the femininity scale is equivalent to the trait of nurturance (or expressiveness).

DISCUSSION

The positive relation between MPAs and temperament appears to hold in college students as well as in children (cf. Krouse & Kauffman, 1982). Moreover, the typical finding of a stronger relation in males was also evidenced in the college sample. These results were found in spite of a likely range restriction in using college students. That is, young adults of extreme temperament (hyperactive, impulsive, short attention span) are unlikely to have reached a college level of education. Future studies in the general population may well show stronger results.

These findings support the resurging interest in biological and physical correlates of personality. It is remarkable that a physical marker of personality is available in adulthood. (Note again that MPAs are not linked to physical attractiveness and are rarely known to the individual who possesses them). The observed relationships provide further evidence that temperament has a biological basis. Previous work, however, has evidenced the

effects of heredity on temperament (e.g., Buss & Plomin, 1975). The relationship with MPAs supports a congenital explanation for temperament. Future research must be directed toward separating genetic and congenital effects.

The use of MPAs as a physical marker may provide a useful tool for further temperament research. Because MPAs are reliably measured and permanent, the development history of high- and low-rate individuals can be studied using cross-sectional data. Further work is underway on factoring the 17 MPAs into more specific clusters with the aim of predicting more specific behaviors.

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Table 1

Correlations between total MPAs and Measures of Temperament

	Males	Females	Combined
Sample size	25	49	74
Lifestyle factors:			
Physically Active	.34*	-.12	.31**
Aggression/Misbehavior	-.03	.15	.28**
Clumsiness	.37**	.09	.35**
Behavioral Index	.26	.12	.25*
Buss-Plomin Temperament:			
Emotionality	.35*	.14	.22*
Activity	.21	.11	.15
Sociability	.22	-.10	.02
Impulsivity	-.06	.09	.05
Extraversion	.33*	-.05	.29**
Jenkins Activity Scale	.35*	.14	.18

* indicates one-tailed significance at the .05 level

** indicates one-tailed significance at the .01 level

Table 2

Correlations with Sex-Role Dimensions

		Bem's Sex-Role Dimensions	
	N	Masculinity	Femininity
Males	23	.43*	-.35*
Females	30	.22	-.09
Combined	53	.45*	-.27*